REMARKS

Claims 14-19 are cancelled, claims 1-7 and 9-12 are amended, and new claim 20 is added. Claims 1-13 and 20 are presently pending. New claim 20 and the amendments to claims 1-7 and 9-12 are supported by the original specification and claims. Specifically, amended claim 1 is supported by original claim 2 and at page 11, line 32-33 of the original specification; new claim 20 is also supported at page 11, lines 32-33; and the amendment to claim 9 at page 4, lines, 25-30. No new matter has been added. In view of this, Applicants request that the claim amendments be entered at this time.

Applicants appreciate the courtesies extended by Examiner Leon B. Lankford, Jr. during an interview on November 19, 2003 with Applicant's attorney, Rodney J. Fuller. The comments appearing herein are substantially in accord with those presented and discussed during the interview.

Claims 1-13 were rejected under 35 U.S.C. §112, first paragraph for lack of enablement for the reasons set forth on page 2.

Applicants emphasize that Applicants' specification teaches methods of immortalizing human keratinocyte or melanocyte cell lines with retroviral constructs in a way that the retrovrially produced cell line would retain the ability to differentiate and to express proteins and enzymes which are expressed by normal differentiated keratinocytes or melanocytes even after high passage in tissue culture. In addition, Applicants deposited exemplary retroviral-infected cell lines. One skilled in the art, using Applicants disclosure and exemplary cell lines as a reference, would be enabled to immortalize other keratinocyte or melanocyte cells with a retroviral construct so that they retain the ability to differentiate and to express the proteins and enzymes of normal differentiated keratinocyte or melanocyte cells without undue experimentation. In view of this, Applicants respectfully request that this rejection be withdrawn.

Claims 1-13 were rejected under 35 U.S.C. §112, first paragraph for lack of written description for the reasons set forth on page 2-3.

The test for written description is whether the disclosure "reasonably conveys to the artisan that the inventor had possession" at the time of filing. Ralston Purina Co. v. Far-Mar-Co., Inc., 772 F2.d 1570, 1575 (Fed. Cir. 1985). *See also*, Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1331 (Fed. Cir. 2003). Satisfaction of this requirement is measured by the understanding of the ordinarily skilled artisan. Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

Applicants respectfully direct the Examiner's attention to a more recent Federal Circuit case, Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1331-1333 (Fed. Cir. 2003), which explains how the written description requirement is to be applied. Amgen involved the use of recombinant technology in the production of the cells to produce the hormone EPO, which controls the formation of red blood cells in bone marrow. The claims at dispute of interest here were the ones directed to recombinant vertebrate cells and mammalian cells used in the production of EPO. Hoechst Marion Roussel argued that Amgen failed to sufficiently describe all vertebrate and mammalian cells as engineered in the claimed invention.

In providing its decision, the Court first pointed out that in Enzo Biochem, Inc. v. Gen-Probe, Inc., 296 F.3d 1316 (Fed. Cir. 2002) they had clarified that Eli Lilly "did not hold that all functional descriptions of genetic material necessarily fail as a matter of law to meet the written description requirement." In Enzo Biochem, the court held that a bacterial deposit was sufficient to meet the written description requirement, as one skilled in the art could obtain the claimed nucleotide sequences from the public depository and follow the appropriate techniques to excise the nucleotide sequences from the deposited organisms.

In Amgen, the Court stated that both Eli Lilly and Enzo Biochem were not applicable to the claims before them as the terms "vertebrate" and "mammalian" cells merely identified types of cells instead of undescribed, previously unknown DNA sequences. Instead the claims of Amgen's patent referred to types of cells that could be used to produce recombinant human EPO. The Court pointed out that, the words "vertebrate" and "mammalian" readily convey distinguishing information concerning their identity such that one of ordinary skill in the art could visualize or recognize the identity of the members of the genus.

Like Amgen where the terms "vertebrate" and "mammalian" conveyed a distinguishing description of the cells, the phrase "retroviral-infected human keratinocyte or melanocyte cell line" used in the presently pending claims also readily convey distinguishing information concerning their identity. Applicants' four deposited retroviral-infected human keratinocyte or melanocyte cell lines provide further support that Applicants were in possession of the present invention at the time of filing and that they have met the written description requirement, especially in light of the Enzo Biochem decision explained above.

Furthermore, Applicants submit herewith a statement regarding the microorganism deposits made under the terms of the Budapest Treaty, stating that all restrictions on

availability to the public of the deposited materials will be irrevocably removed upon issuance of the patent.

Applicants have also amended the claims to emphasis that the cell lines are retroviral-infected immortalized cells and further that the retroviral-infected immortalized keratinocyte cell lines express keratine proteins expressed by normal differentiated keratinocytes, while the melanocyte cell lines express melanin proteins expressed by normal differentiated melanocytes.

In view of the above arguments, the amendments made to the claims, and the deposited cell lines, Applicants respectfully submit that one skilled in the art would reasonably understand that Applicants were in possession of the presently claimed invention at the time of filing. Applicants therefore request that the rejection for lack of written description be withdrawn.

Claims 1-13 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative under 35 U.S.C. §103(a) as obvious over Boukamp *et al.* (AJ) or Steinkraus *et al.* (AO) for the reasons set forth on pages 6-7.

As explained during the Interview, Boukamp *et al.* is directed immortalization of human skin keratinocytes without the use of a retrovirus construct, for example, SV40, in order to minimize the virus-related effects on differentiation. Boukamp *et al.* produced spontaneous immortalization of human skin keratinocytes by using varied culture conditions, resulting in a spontaneously developed cell line (HaCaT) without the use of a virus. According to Boukamp *et al.* the spontaneous cells were non-tumorigenic and retained the capacity for normal differentiation. Boukamp *et al.* actually teaches away from the present invention of retroviral-infected immortalized human keratinocyte or melanocyte cells prepared by infection with a retroviral construct. Boukamp *et al.* teaches that immortalization using a retroviral constructs should be avoided in order to obtain normal differentiation and that spontaneous generation of immortalized cells is preferred for this reason.

Boukamp *et al.* fails to teach or suggest Applicants' presently claimed retroviral-infected immortalized human keratinocyte or melanocyte cell lines or methods of preparing such, wherein the cell line retains the ability to differentiate and to express proteins and enzymes which are expressed by normal differentiated keratinocytes or melanocytes even after high passage in tissue culture. It was Applicants that first discovered that immortalized human keratinocyte or melanocyte cell lines could be prepared with a retroviral construct in a way that maintained normal differentiation.

Steinkraus *et al.* is directed to the characterization of beta-adrenoceptors in the spontaneously generated cell line produced by Boukamp *et al.* Steinkraus *et al.* simply uses the nonretroviral-infected cells produced in Boukamp *et al.* Steinkraus *et al.* fails to teach or suggest the presently claimed invention. Applicants' retroviral-infected immortalized human keratinocyte or melanocyte cell lines retain normal differentiation characteristics. Applicants' presently claimed retroviral-infected immortalized keratinocyte cell lines express keratine proteins expressed by normal differentiated keratinocytes, while the melanocyte cell lines express melanin proteins expressed by normal differentiated melanocytes. Neither Boukamp *et al.* or Steinkraus *et al.* teach Applicants' retroviral-infected cell lines or teach methods of making them.

In view of the deficiencies of the prior art, Applicants respectfully request that this rejection be withdrawn.

In view of the above amendments and arguments, it is believed that the application is now in condition for allowance, early notification of such would be appreciated. Should the Examiner not agree, then a telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of the claims.

Respectfully submitted,

Date 12/24/03

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